



Product:

## Hardcoated Polyester Film CE 140 and CE 190

### FILM PET CE 140 and CE 190 Hardcoated Polyester

#### Application

Membrane Touch Switch and Facia-panel manufacture

#### Features and Benefits

Excellent Print Receptive Coating  
Chemical Resistant  
UL Listed Base Film  
Embossable

Abrasion Resistant  
Optically Clear  
UV & Solvent Based inks

PET Film CE is a range of high grade overlay films developed to meet the exacting requirements of Screen Printers, Membrane Touch Switch and Fascia-panel manufacturers and their end users.

Based on optical grade heat-stabilised polyester it has a typical residual shrinkage of less than 0.3%.

It is coated in 1000 Class Clean Rooms, on one side with a well proven print receptive layer for UV and solvent based inks and on the other side with an advanced UV cured resin.

This film has achieved the optimum performance in hardness, embossability, chemical resistance, extensive switch life and the ability to be die-cut.

PET Film CE can be tailored to match different performance requirements including the application of different hardcoats and adhesives on to a variety of flexible substrates.

These products are backed up by a programme of customer oriented development work to respond to customer needs.





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PROPERTIES	TEST METHOD	TYPICAL VALUES		UNITS
		CE 190	CE 140	
<u>General</u>				
Total Thickness	Caliper	187	135	microns
The following properties are given for Film PET CE 190				
<u>PROPERTIES</u>				
<u>Optical</u>				
Light Transmission	ASTM D1003	88		%
Gardner Haze	RITM 004**	58		%
Gloss Level (60°)	ASTM D2457	19		%
Yellowness Index	RITM 005**	3.8		
<u>Mechanical</u>				
Mar Resistance: Pencil	See notes (a)	4H		
Taber Abrader	RITM 005** See notes (b)	-4		%
Rub Test	See notes (c)	> 1 Million		Rubs
Cross Hatch Adhesion	RITM 0148		4B	
Switch Test	See note (d)	>3 Million		Flexes
<u>Electrical</u>				
Volume Resistivity	ASTM D257*	10 <sup>15</sup>		ohm/m
Surface Resistivity	ASTM D257*	10 <sup>13</sup>		ohm/sq
Dielectric Strength	ASTM D149*	125		kV/mm
<u>Thermal</u>				
Usage Temperatures: Suggested Minimum		-40		°C
Suggested Maximum		150 (80 °C if embossed)		°C
<u>Dimensional Stability</u>				
MD	30minutes @ 120°C	- 0.3		%
TD	30minutes @ 120°C	+/- 0.1		%
Flammability	UL Flame Class*	HB		
<u>Chemical</u>				
Spot Test	ASTM 1308	See Technical Manual		
Immersion Test	MEK 24 hrs	Satisfactory		
Chemical Resistance	DIN42 115	See Technical Manual		
* Figures derived from DuPont Teijin Films™ (Melinex® O) ** Figures derived from Internal Test Methods				

**Notes**

- (a) Pencil Test: Increasingly hard grades of pencil lead are scored across the surface of the coated PET. The point of the pencil is moved along the surface of the film with increasing force until the pencil breaks or until the surface of the coated film is scratched. The tests are continued until the pencil scratches the surface. The value given is the highest hardness value which does not scratch the coated film
- (b) Taber Test: A Taber abrader (CF10F wheel;500g load;100 cycles) is used to abrade the test sample. Measurement of the haze value, before and after abrasion, are taken and the % change recorded. The average of three test samples is given
- (c) Rub Test: A test sample of the coated film is embossed to give a rim profile. The sample is then tested with repeated rubs with a standard rubber finger (45° Shore hardness) which travels along the surface of the film and over the rim. The 'finger' is weighted on a cantilever with a 500g weight. There should be no signs of wear and no evidence of coating delamination.
- (d) Switch Life: A standard rubber finger (45° Shore hardness) is used to flex an embossed dome switch continuously at a rate of 2 flexes/second. Pressure applied must be sufficient to force the apex of the dome to make contact with the support table. The switch should be examined at regular intervals to check for weight loss due to particles flaking off or cracking.